

Application No. 10/063,414
Amendment dated 13 March 2006
After Final Office Action of January 11, 2006

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Docket No.: 08228/1203278-US5

REMARKS

Claims 1-17 are pending. By this Amendment, Claims 1, 4, 7 and 10 are amended and new Claims 16-17 are added.

In the Office Action, the Examiner rejects Claims 1-15 under 35 U.S.C. 103(a) over U.S. Patent No. 6,072,904 to Desai, *et al.* (Desai) in view of U.S. Patent No. 5,721,902 to Schultz (Schultz) and further in view of U.S. Patent No. 5,864,845 to Voorhees, *et al.* (Voorhees). This rejection is respectfully traversed.

Applicants respectfully note that Desai discloses receiving a target image from a user, identifying vectors of edge characteristics within the target image and within images in a database, and then comparing edge characteristic vectors of the target image against those of the images in the database, to match the target image with images in the database, or in other words identify images in the database that match the target image. Desai further discloses increasing a speed of the search by limiting the scope of the search. The database is first partitioned into clusters, and then the search is performed on (or limited to) a cluster that is most similar to the target image. See, e.g., Desai's Abstract and Desai at column 2, lines 22-38.

Desai apparently fails to disclose or suggest a) identifying, using a semantic net hierarchy, a lowest-level term in the hierarchy that subsumes all queries in a grouping of search requests, as recited for example in independent Claim 1, and b) identifying, using a semantic net hierarchy, a lowest-level term in the hierarchy that subsumes all of the expanded query metadata results in the grouping of expanded query metadata results, as recited in independent Claim 4. In contrast, Desai mathematically matches edge characteristic vectors of images. Desai does not appear to disclose or use a semantic net hierarchy. Furthermore, since Desai is directed to images and mathematical descriptions of image characteristics, Desai apparently fails to disclose or suggest identifying a lowest level linguistic term, as recited for example in dependent Claims 16-17. Schultz and Voorhees fail to overcome these deficiencies of Desai.

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With respect to Schultz, Applicants note that Schultz discloses expanding terms in a search *query*, and then performing a search using the expanded term(s). See, for example, the Abstract of Schultz and Schultz at column 6, lines 24-39. However, Schultz apparently fails to disclose or suggest expanding a search *result*, and thus fails to disclose or suggest expanding metadata associated with selected media records that are defined by search results, as encompassed by independent Claim 4. Desai and Voorhees fail to overcome this deficiency of Schultz.

Applicants acknowledge that the Examiner cites Schultz at column 2, lines 57-61, which teach identifying both text and multimedia documents relevant to a query. However, Applicants note that Schultz discloses at column 4, lines 6-31 how this is done. In particular, this passage of Schultz discloses searching an index database that associates search terms with both text documents and multi-media records. Schultz's query expansion does not appear to implement or enable the feature of identifying both text documents and multimedia files. Accordingly, the Examiner's asserted motivation for combining Schultz with Desai for the feature of expanding a search query, does not logically follow. Applicants respectfully submit that Schultz's feature of searching an index database search terms with both text documents and multi-media records, does not provide motivation to combine Schultz's query expansion teaching with Desai.

With respect to Voorhees, Applicants note that Voorhees performs clustering based on search *results*, and does not cluster based on search *queries*. Generally, Voorhees considers a situation where a search is performed by simultaneously applying the same search query to different search engines, and then combining search results from the different search engines into a single list report. Voorhees's objective is to predict the effectiveness for each of the different search engines for the search query, and then rank and report the results in the list based on the predictions. Thus, a search engine that is predicted to provide highly relevant search results can be allotted more space in the list for its search results, and/or its search results can be given higher ranking, than those of search engines predicted to provide less relevant results.

Voorhees discloses first applying a training procedure to rate the different search engines for representative search queries. After training is completed and a new search query is received, the

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training data can be used to predict how relevant each search engine's search results will be, and the prediction for each engine is used to organize the combined search results of the all the engines into a single list.

Specifically, Voorhees in columns 4-5 discloses a training procedure. For each search engine, the search engine searches using training queries, and the search results are returned by the engine. **The training queries are clustered based on how similar the search results are to each other.** See, for example, Voorhees at column 4, lines 42-46. Centroids of the clusters are also generated (see e.g., column 4, lines 46-48). The search results are evaluated for relevance by a user (see, e.g., column 2, lines 42-44 and lines 46-49), and each cluster is assigned a weight. The cluster's weight indicates how effective or relevant the search results of the training queries in that cluster are, for that search engine (see e.g., column 4, lines 51-54). See also Voorhees at column 5, lines 32-56. Thus, the training queries are clustered based on the search results, not on content of the training queries.

After training when a new search query is given to a search engine, a cluster centroid is identified that is most similar to the new search query, and the weight (or expected quality measure) of the corresponding cluster is returned as the weight for the search engine. Then, the returned weight is used to rank and/or present the engine's search results for the new query in the single, combined list of search results from all the engines.

Accordingly, Voorhees fails to disclose or suggest applying a statistical clustering algorithm to the expanded logged search requests based on content of the expanded logged search requests, thereby grouping similar search requests together, as recited in Claim 1, and similar features recited in independent Claims 7 and 10. Applicants further note that Voorhees fails to disclose or suggest selecting a subset of search requests prior to clustering. In particular, Voorhees fails to disclose or suggest applying a statistical clustering algorithm to the expanded logged search requests based on content of the expanded logged search requests, wherein the search result for the logged search requests is empty, as encompassed by Claim 7. Voorhees further fails to disclose or suggest applying a clustering algorithm to search requests whose corresponding results received expressions

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of interest from users. Accordingly, Voorhees fails to disclose or suggest *performing, by the search engine, searches based upon the search requests, yielding respective search results, each search result defining selected digital media records, receiving expressions of interest from users with respect to selected digital media records, logging the search requests for which a user has expressed interest in a selected digital media record, expanding the logged search requests, and applying a statistical clustering algorithm to the expanded logged search requests based on content of the expanded logged search requests*, as recited in independent Claim 10. Desai and Schultz fail to overcome these deficiencies of Voorhees.

For at least the above reasons, Applicants respectfully submit that Desai, Schultz, and Voorhees, when considered both separately and in combination, fail to disclose or suggest the combinations of features recited in Claims 1-12 and 16-17. Withdrawal of the rejection of Claims 1-12 under 35 U.S.C. § 103(a) over the asserted combination of Desai, Schultz and Voorhees is respectfully requested.

In the Office Action the Examiner rejects Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desai in view of Schultz and further in view of Voorhees and further in view of U.S. Patent No. 6,385,596 to Wiser, *et al.* (Wiser).

This rejection is respectfully traversed. Applicants respectfully submit that Wiser fails to overcome the respective deficiencies of Desai, Shultz, and Voorhees listed above. Accordingly, Claims 13-15 are allowable for at least the same reasons as allowable Claim 10 from which they depend. Withdrawal of the rejection of Claims 13-15 are rejected under 35 U.S.C. 103(a) over the asserted combination of Desai, Schultz, Voorhees and Wiser is respectfully requested.

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CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicants' undersigned representative at 1.206.262.8900.

Dated: March 13, 2006

Respectfully submitted,

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